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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,709	01/24/2006	Saied Abedi	FUJL 22.280 (100794-01012)	2992
26304 7590 06/21/2010 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER ZEWDU, MELESS NMN	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 06/21/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,709	<b>Applicant(s)</b> ABEDI, SAIED	
	<b>Examiner</b> Meless N. Zewdu	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32, 34 and 35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 9, 16, 19, 20, 26-28 and 30-32 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 10-12, 13-15, 17, 18, 21-25 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/26/10</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. This action is in response to the communication filed on 4/16/10.
2. Claim 33 has been cancelled.
3. Claims 1-32 and 34-35 are pending in this action.
4. This action is final.

***Information Disclosure Statement***

The information disclosure statement filed 1/26/10 has been partially considered. The ones that are crossed-out are those which are not considered for lack of translation.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-11, 21, 22, 26-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (APA) in views of Parkvall et al. (Parvall) (US 2002/0080719 A1).

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**As per claim 1:** while “transmitting data packets” and “the data packets being for onward transmission to a plurality of destination user equipments” in the preamble is considered as an intended use (for it does not enhance the body of the claim), the APA discloses amended) – routing of data from a source UE to a destination UE via a base station.(see page 1, lines 20-30) , including known techniques of up-link scheduling (see page 2, lines 15-28). But, the APA does not explicitly teach about --- determining a measure of a downlink quality of service and scheduling uplink transmission in dependence on the measure of the downlink quality o service. However, in the same field of endeavor, Parkvall teaches about scheduling transmission of data over a transmission channel based on signal quality of a receiver channel, wherein --- a base station (having a scheduler and a detector) determines a signal quality of the downlink channel; and the scheduler then schedules transmission of data over the downlink channel based on the determined signal quality of both the up-link and downlink radio channels (see paragraphs 0025, 0050; claim 16). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of the APA with that of Parkvall for the benefit of providing a reliable and efficient data delivery in a communications system (see paragraph 0001).

**As per claim 31:** most of the features of claim 31 are similar to the features of claim 1, except --- a transmission format to be used user by a user equipment and a transmitting unit which transmits to the user equipment an indication of a transmission format to be used by the user equipment, which is taught by the APA (see paragraph 0008).

Therefore, claim 31 is rejected on the same ground and motivation as claim 1.

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**As per claim 2:** Parkvall teaches about a method, wherein the measure of the downlink quality of service is determined at the base station (see paragraph 0025).

**As per claim 4:** the APA teaches about a method, wherein the base station transmits to a user equipment an indication of a transmission format to be used by the user equipment (see paragraph 0008).

**As per claim 5:** Parkvall teaches about a method, wherein the base station determines a measure of a quality of service for each of the plurality of destination user equipments (see paragraph 0025; claim 16). When the references are combined as shown in the rejection of claim 1 above, the APA will become capable of measuring a quality of service for its plural destination user equipments.

**As per claim 8:** Parkvall teaches about a method, wherein a plurality of different measures of a quality of service are determined for each of the plurality of destination user equipments (see paragraphs 0025 and 0026). Note: bit error rate and SINR, which are provided as examples.

**As per claim 16:** the APA teaches about a method, wherein the uplink transmissions are using rate scheduling (see page 2, lines 4-8).

**As per claim 19:** Parkvall teaches about a method, wherein a rate of uplink transmission is varied by adjusting a modulation and coding scheme level (see paragraph 0047).

**As per claim 26:** Parkvall teaches about a method, wherein the base station operates a scheduling mechanism for downlink transmissions (see paragraph 0025).

**As per claim 27:** Parkvall teaches about a method, wherein the base station transmits

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the data packets directly to the plurality of destination user equipments (see fig. 5; abstract).

**As per claim 28:** Parkvall teaches about a method, wherein the base station transmits the data packets to the plurality of destination user equipments via a network (see abstract; fig. 5).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claim 1 above, and further in view of Cannon et al. (Cannon) (US 2002/0094778 A1).

**As per claim 3:** but, the references applied to claim 1 do not explicitly teach about a method, wherein the base station transmits an indication of the downlink quality of service to user equipment. However, in the same field of endeavor, Cannon teaches about connection quality indicator, wherein the connection quality provides a user with information relating to a quality of a connection (see abstract; paragraph 0025).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Cannon for the obvious benefit of informing a user terminal the quality of service it can receive.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claim 1 above and further in view of Zhang et al. (Zhang) (US 2003/0166406 A1).

**As per claim 9:** but, the references applied to claim 1 above do not explicitly teach about a method, wherein at least one of the following measures of a quality of packet delivery from the base station to a destination user equipment is determined:

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(a) throughput ratio

(b) ratio of satisfied packets

(c) base station buffer occupancy. However, in the same field of endeavor, Zhang teaches about a method of implementing state transitions for high speed data transmission in wireless access networks, wherein a state scheduler used parameters including buffer occupancy (see paragraph 0063). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the teaching of the above references with the teaching of Zhang for the benefit of performing a priority ranking of the users (see paragraph 0064).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claim 1 above and further in view of Sjoberg et al. (Sjoberg) (US 7,403,892 B2).

**As per claim 20:** the references applied to claim 1 above do not explicitly teach about a method, wherein a rate of uplink transmission is varied by adjusting intervals at which the uplink transmissions take place. However, in the same field of endeavor, Sjoberg teaches about adaptive multi-rate (AMR), wherein both uplink and downlink channel quality is monitored based on dynamic coding and modulation (see col. 6, lines 55-61). Therefore, it would have been obvious for one of ordinary in the art at the time the invention was made to further modify the above references with the teaching of Sjoberg for the advantage of improving link adoption and thus quality of transmission (see col. 1, lines 14-20).

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Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claim 1 above and further in view of Nam et al. (Nam) (US 2003/0103514 A1).

**As per claim 31:** most of the features of claim 30 are similar to the features of claim 1 and are rejected on the same ground and motivation therewith. But, the references applied to claim do not explicitly teach about -- a transmitting unit which transmits a credit value to a source user equipment. However, in the same field of endeavor, Nam teaches about scheduling using credits wherein when packets arrive, their schedule information is stored in a token queue in a sequential manner based on the available credit and an arrival sequence (see paragraph 0018). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the APA in view of Parkvall with that of Nam for the advantage of scheduling packets using credits (see paragraph 0002).

**As per claim 32:** the features of claim 32 are similar to the features of claim 30. Hence, claim 32 is rejected on the same ground and motivation as claim 30.

### ***Allowable Subject Matter***

Claims 34 and 35 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or fairly suggest scheduling an uplink transmission based on the destination's quality of service and a credit value, wherein

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the quality of service and the credit are produced by a base station and transmitted to a user equipment for scheduling the uplink transmission, as recited in claims 34 and 35.

Claims 6, 7, 10-12, 13-15, 17, 18, 21-25 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note: the indication of allowable subject matter regarding claims 7, 11, 12, 14, 15, 24 and 25 is because of the respective dependency on claims 6, 10 13 and 23.

### ***Response to Arguments***

Applicant's arguments filed 4/16/10 have been fully considered but they are not persuasive. Applicant's argument/s with corresponding examiner's response's is/are presented below. The applied references are: Applicant's Admitted Prior Art (AAPA) and (US 2002/0080719 A1) issued to Parkvall et al.

**Argument:** Applicant asserts --- Parkvall et al. only involves the two directions of transmission between a base station and the same wireless user equipment – scheduling downlink channel to a particular wireless user equipment based on uplink channel quality from that particular wireless user equipment. Thus, ---- the proposed combination fails to suggest the claimed features in connection with “scheduling uplink transmission from the source user equipment to the base station in dependence on the measure of the downlink quality of service (from the base station to a destination user equipment).”

**Response:** examiner respectfully disagrees with the argument. As stated in the rejection of the claims above, Applicant's Admitted Prior Art (AAPA) discloses/teaches that the base station of figure 1 is responsible for scheduling packets which are to be transmitted to various destinations UEs. The base station is able to make the appropriate scheduling decision because it is solely responsible for transmitting to the destination UEs (see spec. page 1, lines 20-30). The base station also includes the known techniques of uplink scheduling (see page 2, lines 15-28). In brief, the base station performs uplink scheduling and transmits to destination UE. This fact of the AAPA is not disputed by applicant. What is not disclosed/taught by the AAPA is however, --- determining a measure of a downlink quality of service and scheduling uplink transmission in dependence on the measure of the downlink quality of service. This deficiency in the AAPA is provided by Pakvall's reference. Although examiner cites paragraphs 0025 and 0050, applicant, while arguing against the teaching in paragraph 0025, remains silent about the teaching in paragraph 0050. Both of these paragraphs are relevant to the claims. However, paragraph 0050 presents a more clear teaching. In the same paragraph, it is stated that --- the transmitting node (could be the base or mobile) determines the quality of the uplink channel (or downlink channel) (step S4). The transmitting node then schedules the data transmission over the downlink channel (or the uplink channel) when quality of the uplink channel (or the downlink channel) is sufficient (step S6). The Parkvall reference advantageously determines the quality of both uplink or downlink channels as necessary and based on that determination schedules uplink or downlink data transmission. It is clear that one of ordinary skill in the

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art who has gleaned Parkvall's reference would be tempted to modify the AAPA to make the same more agile or flexible system so as to provide quality based scheduling of data transmission. Therefore, examiner has not found the argument to be persuasive.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne D can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

/Meless N Zewdu/

Primary Examiner, Art Unit 2617

6/18/2010